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DESCRIPTORS- *RESEARCH PROJECTS, *RESEARCH REVIEWS (PUBLICATIONS), *VOCATIONAL EDUCATION, *EDUCATIONAL RESEARCH,

ABSTRACTS OF 31 COMPLETED AND IN-PROCESS PROJECTS ARE PRESENTED IN THIS ANNUAL REVIEW OF VOCATIONAL RESEARCH IN CONNECTICUT. EACH ABSTRACT INCLUDES THE PROJECT NUMBER, PRINCIPAL INVESTIGATOR, PURPOSE OF THE STUDY, SOURCE OF DATA, FINDINGS AND CONCLUSIONS, AND IMPLEMENTATION, WHERE POSSIBLE. REPRESENTATIVE PROJECT TITLES ARE--(1) "A STUDY OF THE NEED FOR A VOCATIONAL-TECHNICAL SCHOOL IN THE NEW LONDON-GROTON AREA," (2) "ANNUAL STATISTICAL SUMMARY," (3) "PREDICTIVE TEST BATTERY--REGIONAL VOCATIONAL TECHNICAL SCHOOLS," (4) "PROGRAM DEVELOPMENT IN VOCATIONAL EDUCATION IN HEALTH SERVICE OCCUPATIONS AT THE SECONDARY AND POST-SECONDARY LEVELS IN CONNECTICUT," (5) "NON-GRADUATE TERMINATIONS IN CONNECTICUT VOCATIONAL-TECHNICAL SCHOOLS," (6) "AN EXPERIMENTAL STUDY TO EVALUATE THE INTRODUCTION OF A VOCATIONALLY ORIENTED PROGRAM AT THE JUNIOR HIGH SCHOOL LEVEL," (7) "A STUDY OF BEGINNING OFFICE WORKERS IN CONNECTICUT," (8) "DISTRIBUTIVE EDUCATION WHOLESALING--A PILOT PROGRAM AT HARTFORD PUBLIC HIGH SCHOOL," (9) "GRADUATE FOLLOWUP SURVEY--CLASS OF 1966," (10) "A SURVEY TO DETERMINE THE OCCUPATIONAL NEEDS FOR THE FOOD AND LODGING INDUSTRY," (11) "EDUCATIONAL STATUS STUDY--DIVISION OF VOCATIONAL EDUCATION," (12) "THE UNIVERSITY AND VOCATIONAL-TECHNICAL EDUCATION," (13) "SOPHOMORE IQ STUDY--VOCATIONAL-TECHNICAL SCHOOLS," (14) "SURVEY OF TRAINING NEEDS FOR DIESEL ENGINE MAINTENANCE AND REPAIRMEN," AND (15) "SURVEY OF TRAINING NEEDS FOR SMALL GASOLINE ENGINE REPAIRMEN." (MM)

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Research Report

1966-1967

CONNECTICUT STATE DEPARTMENT OF EDUCATION

DIVISION OF VOCATIONAL EDUCATION

RESEARCH COORDINATING UNIT

DECEMBER, 1967

VT005146

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FOREWORD

The Report of the Panel of Consultants on Vocational Education in 1963 stated that "the importance of research in the field of vocational education must be recognized." With the support of local, State and Federal agencies, the value of research has been recognized and supported.

However, it is vital to recognize that research, theoretical and applied, is a means to an end and not an end in itself. As a tool to be used in planning, programming and modifying concepts and activities of vocational education, it should result in some impact or influence in this field of education.

It is understood that each specific research study may not result in a positive action. Some studies may lead to other research, some findings may indicate no action and many investigations may result in a better understanding of the education process. Despite this, there should be a number of measurable outcomes emanating from the findings of research studies.

The Division of Vocational Education of the Connecticut State Department of Education recognized the value of vocational research when in 1952 it appointed a Consultant in Vocational Research. Since 1962 it has published annual reviews of vocational research conducted in the State. Each issue has been improved in format and disseminated on a broader basis. This current issue has gone further by attempting to identify some of the action taken as a result of the findings of various studies. This approach builds in some evaluative criteria for research in terms of its impact on vocational education. Some of the studies reported are still in process, others have been completed recently and no action has been taken to date, and others as specified above do not call for positive action. However, the Research Coordinating Unit of the Bureau of Vocational Services can be proud of the number of concrete and positive steps that have been and are being taken to implement the findings.

Herbert Righthand
Chief
Bureau of Vocational Services

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Project No. 649

A STUDY OF THE NEED FOR A VOCATIONAL-TECHNICAL SCHOOL IN THE MILFORD-STRATFORD AREA

Principal Investigator:

Errol J. Terrell, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

To project potential enrollment for a vocational-technical school in the Milford-Stratford area.

Source of data:

Enrollment statistics for Public Schools published by the State Department of Education, Bureau of Research, Statistics and Finance. Percentage of attendance data for vocational-technical schools. State Labor Department "Labor Market Letters."

Findings and Conclusions:

On the basis of geographic accessibility a vocational-technical school in the Milford area might best be located near the Milford-Orange boundary. A vocational-technical school in the Milford area would draw most enrollees from Orange, Milford, Stratford and West Haven.

Interest in the establishment of a vocational-technical school in the Milford area has been exhibited by many groups including members of the industrial community, educators and students.

Projected enrollments for the towns of Orange, Milford, Stratford and West Haven appear large enough to support a vocational-technical school in the Milford area. Assuming the same percentage of students were to attend this school, as that experienced statewide (6%), a vocational-technical school in the Milford area would have an enrollment of five hundred and ninety-three students by 1973.

Implementation:

Special Act #276, as passed by the legislature, allocated the sum of $500,000.00 for planning and site acquisition for the new vocational-technical school.

The Public Works Department will be provided with a site proposal in January, 1968.

Project No. 6410

A STUDY OF THE NEED FOR A VOCATIONAL-TECHNICAL SCHOOL IN THE NEW LONDON-GROTON AREA

Principal Investigator:

Errol J. Terrell, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

To determine the potential enrollment and location of a vocational-technical school in the New London-Groton area.

Source of data:

Enrollment statistics for Public Schools published by the State Department of Education, Bureau of Research, Statistics and Finance. Percentage of Attendance data for Vocational-Technical Schools. State Labor Department, "Labor Market Letters."

Findings and Conclusions:

The population distribution in the New London-Groton area favor Groton as the location for the establishment of a new regional vocational-technical school.

Enrollment for this school would be most apt to be drawn from the towns of East Lyme, Groton, Ledyard, Montville, New London, North Stonington and Waterford. In addition, students from other parts of the state may be interested in learning a trade included in the curriculum of this school, but not offered in a regional vocational-technical school in their community.

Data on present enrollments in grades 1 through 4 (eighth graders of 1970) indicate that a school in this area would have a total enrollment of approximately 454, starting in 1973.

The effect of a New London-Groton area school on the Norwich Regional Vocational-Technical School would be to depress the Norwich enrollment, in a period when a large expansion of capacity is underway.

Implementation:

The findings of this report has prompted the Legislature to pass Special Act #154 which requires the State Board of Education to study the need for a regional vocational-technical school in the town of Groton and report its findings and recommendations to the 1969 session of the General Assembly.

Project No. 6516

A STUDY TO DETERMINE THE POTENTIAL ENROLLMENT IN THE PROPOSED TECHNICAL INSTITUTE TO BE LOCATED IN THE ORANGE-NEW HAVEN AREA

Principal Investigator:

Robert E. Bennett, Division of Vocational Education
Connecticut State Department of Education

Purpose of Study:

To project the enrollment of a proposed technical institute to be located somewhere in the Orange-New Haven Area.

Source of data:

Technical institute acceptance, applicant, and enrollment statistics. High school enrollment projections developed by the Bureau of Research, Statistics and Finance.

Findings and Conclusions:

On the basis of the data presented in the report, it would appear there is a need for a technical institute in the Orange-New Haven area. Evidence further indicates that a satisfactory enrollment could be expected. The figures show that the proposed new institute could be expected to enroll 299 students in 1970 with the enrollment increasing to 510 students by 1975.

Implementation:

Special Act #276, as passed by the legislature allocated funds, not to exceed $5,360,000.00, to build a new technical college.

At present, sites on which to place the college are being investigated.

Project No. 6517

PREDICTIVE TEST BATTERY -- REGIONAL VOCATIONAL-TECHNICAL SCHOOLS

Principal Investigator:

Dr. John G. Miller, School of Education
New York University

Project Consultant:

Richard C. Wilson, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

To study the predictive value of a pre-selected battery of selected testing instruments for the prediction of student success in differentiated trade programs.

Source of data:

Students records, trade performance tests, standardized test battery results.

Findings and Conclusions:

Phase II was initiated in the spring of 1967 and will continue through the 1967-68 school year.

The final report on Phase I (a pilot study) indicated that the use of the standardized test battery in the pilot study has served to establish a desirable administrative plan and a necessary 'ease of contact' for the future testing and the gathering of data in each of the fourteen schools.

Difficulties of test programming, interruped instruction, time requirements, and physical space needed for testing have each been explored. It is anticipated that these difficulties can be eliminated in future testing by continued planning and ultimate reduction of the test battery through the continued analysis of test results.

It is expected that eventually the battery of tests may be reduced to a series of sub-tests which can be administered within a relatively brief testing period.

Project No. 6518

NON-GRADUATE TERMINATIONS IN CONNECTICUT VOCATIONAL-TECHNICAL SCHOOLS

Principal Investigator:

Guidance Coordinators' Research Committee, Bureau of Vocational-Technical Schools

Project Consultant:

Richard C. Wilson, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

To identify vocational-technical school leavers and compare them with graduates of these schools to determine differences and similarities between the two groups.

Source of data:

Reports by the fourteen vocational-technical guidance coordinators.

Findings and Conclusions:

This is a long-range study initiated in 1965. Some of the significant findings to date show that:

1. One-third of the non-graduate terminators did not receive a final interview.
2. Thirteen percent of those students transferring to other schools did so because of a change in their educational plan, i.e., planning to continue their education beyond high school.
3. Early evidence would seem to contradict some of our assumptions and generalizations concerning student selection and school drop-outs.
4. More data needs to be compiled before more meaningful analysis can be made.

Project No. 6521

PROGRAM DEVELOPMENT IN VOCATIONAL EDUCATION IN HEALTH SERVICES OCCUPATIONS AT THE SECONDARY AND POST-SECONDARY LEVELS FOR THE HARTFORD AND WATERBURY LABOR MARKET AREAS

Principal Investigator:

David Pinsky, Professor of Labor Education,
University of Connecticut

Project Consultant:

Dr. P. T. Masley, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

To ascertain opportunities in the field of health services and to identify distributions of those occupations which have potential for program development in vocational education at the secondary and post-secondary level in the Hartford and Waterbury Labor Market areas.

Source of data:

Interviewers obtained data on health occupations from all hospitals and convalescent homes in the Hartford and Waterbury Labor Market areas.

Questionnaires designed to obtain data on health occupations were sent to all doctors and dentists in the Hartford and Waterbury Labor Market areas.

Findings and Conclusions:

Trends in health occupations in the Waterbury area show that there will be a need for 2,130 trained persons in five years and 3,664 in ten years for the 38 health occupations surveyed. Greatest demands are also in the nursing field with 1,714 staff nurses, 660 nurses aides, and 210 licensed practical nurses needed in the next ten years. In technical and other occupations, there will be a demand in the next ten years for a total of 42 laboratory technicians, 63 dental hygienists, 68 chair-side dental assistants, 60 secretary-dental assistants and 247 secretary-receptionists.

Findings in the Hartford area study indicate that there will be a need for 8,526 trained persons in five years and 15,859 in ten years for the 50 health services occupations investigated. Greatest demands are in the nursing field with 6,159 staff nurses, 2,346 nurses aides and 1,016 licensed practical nurses needed in ten years. In technical occupations, there will be a need for 322 medical laboratory technicians, 367 dental hygienists and 136 x-ray technicians.

Implementation:

The findings of this study indicated a need to obtain similar information for all labor market areas in Connecticut. The results of this statewide study can be found under Project No. 665 in this publication.

Project No. 6523

AN EXPERIMENTAL STUDY TO EVALUATE THE INTRODUCTION OF A VOCATIONALLY ORIENTED PROGRAM AT THE JUNIOR HIGH SCHOOL LEVEL

Principal Investigator:

Cooperative study between Yale University and Prospect Public Schools

Purpose of Study:

The purpose of this study is to experiment and evaluate the introduction of a vocational-oriented program at the junior high school level.

Source of data:

Criteria including pupil school file, teacher anecdotal records, report cards, attendance records, discipline reports, intelligence and achievement scores were used for student selection.

Findings and Conclusions:

When comparing grade seven and grade eight results, the four major subject areas show increases. The students themselves seemed to have improved considerably over the previous year. Twenty-one of the twenty-nine enrollees improved, four remained constant, and four declined slightly.

According to an evaluative report of the project "this positive change can be attributed solely to the formation of the project group. The students are interested in what they are being taught and make a greater attempt to learn the required material. Much of their classroom work is correlated to their shop duties; they are therefore much more eager to learn material that they may apply in their work activities. They see a reason for staying in the classroom that they may have lost sight of during the past year, and now seem to be pointed in the right direction. An increase in almost every case cannot justifiably be attributed to chance factor alone but must have its primary roots with the institution of the Vocational Training Program."

Project No. 6524

BUSINESS EDUCATION CURRICULUM IMPLICATIONS OF THE EFFECT OF TECHNOLOGICAL CHANGE ON THE TYPES OF OFFICE MACHINES USED BY SELECTED CONNECTICUT BUSINESSES

Principal Investigator:

Dr. Cletus Clow, Associate Professor of Business Education,
Central Connecticut State College

Project Consultant:

Dr. P. T. Masley, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

a. To determine the type of office machines used in selected businesses throughout Connecticut.

b. To determine the type of office machines used for instructional purposes in business education departments of the public schools in Connecticut.

c. To gather data which may be used for curriculum revision, background data for possible future studies in this area and a basis for instructional purposes.

Source of Data:

Questionnaires were developed and sent to approximately 7,000 selected businesses in the 17 Labor Market areas of Connecticut and every public school in the State. Data was collected from 3,168 businesses of fifty-nine different types.

Findings and Conclusions:

Some of the high school business education curriculum implications of this study, with consideration accorded to the local labor market area needs, are:

1. The necessity to provide adequate instructions using the ten-key listing machine which shows a 2 to 1 use over the full-keyboard type.

2. An evaluation of the continued instructional use of the key-driven calculator which seems to be rapidly declining.

3. Increased card punch machine training to meet the increasing demand for this type of skill.

4. The inclusion of instruction in the use of the offset process of copy reproduction.

5. Increased training in the area of the machine transcribing activities.

6. Increased instruction on the use of the printing calculator.

Implementation:

Results of this study are being utilized in office education courses throughout the state in considering purchase of new equipment and training requirements necessary for various office machines. It is anticipated that curriculum revisions may be necessary in some areas as a result of the findings of this study.

Project No. 6525

A GUIDE FOR CURRICULUM EXPERIMENTATION IN FOOD HANDLING AND DISTRIBUTION IN HIGH SCHOOL AND POST HIGH SCHOOL VOCATIONAL TRAINING

Principal Investigator:

Dr. Philip G. Stiles and Dr. W. Howard Martin,
University of Connecticut

Project Consultant:

Dr. P. T. Masley, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

To determine needs for vocational programs, both pre-employment and in-service training; the level and type of teacher and administrator training; and for secondary and post-secondary instructional programs. To develop a curriculum guide in food handling and distribution.

Source of data:

Interviews with food store managers and employees on a randomized sampling basis. Investigations of tasks performed by employees of twenty-five leading food industries.

Findings and Conclusions:

1. Manpower Needs for Food Store Personnel

   A. Six major food chain stores employed 20% of the total Connecticut food store work force in 1966.

   B. There were 889 full-time and 3,789 part-time openings reported by 6 major Connecticut food store chains in 1966.

2. Educational Needs for Food Service Personnel

   A. Food store personnel indicated that work performance was positively related to the level of education of persons under their supervision.

   B. Food store managers, other store personnel and teachers associated with the food industry indicated that more than a moderate need existed for food related courses in schools.

   C. Persons preparing for entry and ultimate advancement into managerial positions needed a common core of competencies in areas of human relations, mathematics, merchandising, marketing, salesmanship, product knowledge, business management and bookkeeping.

   D. A definite need was cited for placement training and/or on-the-job training for successful preparation entry and advancement in food store occupations.

   E. Personnel presently employed in food stores indicated that further education in business management and marketing would be most helpful in their work.

F. Relative to vocational traits that enhance job advancement potential, food store managers regard the "ability to get along and work with others" as most important. A person "well informed about his work" was next in line of importance.

Project No. 6527

PILOT RESEARCH STUDY ON THE OCCUPATIONAL STATUS OF SCHOOL LEAVERS

Principal Investigator:

Roland Ursone, Guidance Coordinator, J. M. Wright Vocational-Technical School

Project Consultant:

Richard C. Wilson, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

To determine to what extent early school leavers of the J. M. Wright Vocational-Technical School are employed in the vocation pursued while in school, and to gather pertinent information on these individuals.

Source of data:

School records, counselors, teachers, employers, and individual students.

Findings and Conclusions:

Attempts were made to reach 398 students who had left school prior to completion between 1956 and 1966. A telephone follow-up of non-respondents was also attempted. Data was gathered on 99 students or 25% of the original sample.

The following information was obtained:

Number employed in trade studied at J. M. Wright Vocational-Technical School	7
Number employed in other occupations	29
Number unemployed	6
Number in armed services	26
Number attending other schools	31
Total responding	99

Project No. 6528

A STUDY OF BEGINNING OFFICE WORKERS IN CONNECTICUT

Principal Investigator:

Dr. Dean R. Malsbary, University of Connecticut

Project Consultant:

Dr. Philip T. Masley, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

To identify the office job-entry positions in Connecticut business firms and the skills, knowledges, attitudes, and understandings necessary for beginning workers.

Findings and Conclusions:

1. The greatest opportunities for young people appear to be in the larger companies.
2. Demand for workers will continue.
3. Advancement opportunities are not made known to workers.
4. Certain high school courses can be helpful.
5. Schools seem to be doing a good job of providing instruction.
6. There appears to be a difference of what a worker does on the job and what the job title implies.
7. Workers perform a wide variety of tasks.
8. Workers are not well informed of job efficiency meaning.
9. Full use is not made of office skills taught in high school.
10. It is felt that supervisors know fully, the quality and quantity of work performed and therefore have a basis for evaluation.
11. Workers can specify definite job likes and dislikes.
12. Desirable person characteristics are important to success.
13. It may be possible to identify certain knowledges and skills for each task.

14. Certain knowledges, skills, and understandings are needed by most beginning workers.

15. Supervisors do not have clear ideas of areas in which workers are strong or weak.

16. Supervisors' opinions of how to improve school programs are vague.

Project No. 6531

AN EXPERIMENTAL SHORTHAND LABORATORY PROGRAM FOR HIGH SCHOOLS IN HARTFORD

Principal Investigator:

William Saxton, Director of Secondary Education, Hartford Public Schools

Project Consultant:

William Clynes, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

To assess the value of modern shorthand laboratories in improving instruction and increasing shorthand skills among differentiated student groups.

Source of data:

Results of two-year experimental program utilizing modern shorthand laboratories to increase the efficiency of shorthand instruction among different groups of students, differentiated on the basis of ability and cultural background.

Finding and Conclusions:

This project is now in its second and final year of its experimental stage. An evaluation and final report will be forthcoming during the 1967-68 school year.

Project No. 6532

AN EXPERIMENTAL PROGRAM IN TYPING FOR NINTH GRADE STUDENTS IN HARTFORD PUBLIC HIGH SCHOOL

Principal Investigator:

William Saxton, Director of Secondary Education, Hartford Public Schools

Project Consultant:

William Clynes, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

To determine the effects of this program comparing both study groups with each other as well as with similar groups not enrolled in typing classes.

Source of data:

Results of an experimental ninth grade typing program involving a control group of average students and an experimental group of potential ninth grade dropouts.

Findings and Conclusions:

This experimental program is now in its second year. A final evaluation will be made during the 1967-68 school year.

Project No. 6533

DISTRIBUTIVE EDUCATION WHOLESALING
A PILOT PROGRAM AT HARTFORD PUBLIC HIGH SCHOOL

Principal Investigator:

John L. Scavetta, Distributive Education Teacher-Coordinator
Hartford Public High School

Project Consultants:

Dr. P. T. Masley, Bureau of Vocational Services
Connecticut State Department of Education

Helen O'Donnell, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

Conduct a pilot program in Distributive Education commonly termed "Wholesaling" at Hartford Public High School in the academic years 1965-66 through 1966-67.

Source of data:

Information was gathered from the Pilot program; a cooperative study "Wholesaling and Distribution in the Greater Hartford Area"; Research and Information Division of Connecticut State Labor Department; United States Department of Labor's

"Study Report #23"; and articles found in "News-letters of the National Association of Wholesalers."

Findings and Conclusions:

1. That wholesaling be supported and continued separately within the Distributive Education Program.

2. That the present wholesaling program be expanded into a two-year effort to include both Junior and Senior students.

3. That on-the-job placement include both Junior and Senior students.

4. That students in Distributive Education be dismissed from school after lunch in order to allow on-the-job training.

Implementation:

A meeting was recently held between representatives of the Hartford Public School system and the Division of Vocational Education at which it was decided to continue this program on an operational basis. The pilot program was well received and supported by the wholesale industry in the Hartford area.

Project No. 661

A STUDY TO DETERMINE THE NEED FOR A TECHNICAL INSTITUTE IN THE NEW LONDON-GROTON AREA

Principal Investigator:

Robert E. Bennett, Division of Vocational Education
Connecticut State Department of Education

Purpose of Study:

To project potential enrollment for a proposed state technical institute in the New London-Groton area.

Source of data:

Enrollment statistics for technical institutes. School population figures published by the State Department of Education, Bureau of Research, Statistics and Finance.

Findings and Conclusions:

Enrollment in a technical institute in this area would be only 158 students by 1975. Establishment of another institute in this section of the state would only serve to reduce enrollment at the Thames Valley Technical Institute in Norwich.

The latter institution could accommodate the projected 153 students from the New London-Groton area.

Implementation:

As a result of the above findings, a decision was made to postpone consideration for a new technical institute in the New London-Groton area.

Project No. 662

ANNUAL STATISTICAL SUMMARY

Principal Investigator:

Richard C. Wilson, Bureau of Vocational Services
Connecticut State Division of Education

Purpose of Study:

To summarize statistical data relevant to enrollments, teachers, programs, etc., in vocational programs in Connecticut for the 1965-66 fiscal year. These data are used for both state and federal reports.

Source of data:

Reports from Connecticut schools and other institutions offering vocational education courses during the 1965-66 fiscal year.

Findings and Conclusions:

A total of 57,222 persons were served by vocational programs in Connecticut last year. This includes full-time preparatory students as well as adult extension, apprentice, and manpower training.

Vocational education courses were offered in seven program areas on secondary and post-secondary level as well as for adults and persons with special needs.

Complete statistics were summarized in federal and state reports.

Project No. 663

A SPECIAL SURVEY OF THE NEED FOR INSTRUMENT MAKERS IN THE WATERBURY AREA

Principal Investigator:

Connecticut Labor Department, Employment Security Division
Research and Information

Project Consultants:

Richard C. Wilson, Bureau of Vocational Services
Connecticut State Department of Education

Frederick S. Okula, Bureau of Vocational-Technical Schools
Connecticut State Department of Education

Purpose of Study:

The survey was conducted at the request of the Division of Vocational Education in order to obtain information regarding future curriculum needs for the instrument making course at W. F. Kaynor Vocational-Technical School in Waterbury.

Source of data:

Questionnaires were sent to all firms in the Waterbury area who employed instrument makers or persons with similar skills.

Findings and Conclusions:

The survey showed that there would be about 50 additional trained instrument makers needed annually by Waterbury area manufacturing employers during the immediate future. This, of course, is assuming that present economic trends continue. Employers indicated that there is an immediate need for 33 instrument makers today.

Implementation:

As a result of this survey, meetings were held with a craft committee to decide the future of the Instrument Making Department at the W. F Kaynor Technical School. It was decided that, in order to better meet the needs of area industries, an Electronic's course with an instrumentation option should be established.

In September, 1967 the Instrument Making shop was converted into an Electronics shop offering the instrumentation option.

Project No. 664

GRADUATES -- VOCATIONAL-TECHNICAL SCHOOLS AND STATE TECHNICAL INSTITUTES

Principal Investigator:

Richard C. Wilson, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

To summarize by school and course the graduates of the 14 state-operated vocational-technical schools and the four technical institutes.

Source of data:

Reports from vocational-technical schools and technical institutes.

Findings and Conclusions:

VOCATIONAL-TECHNICAL SCHOOLS

There were 2,048 graduates in 1966 -- an increase of 68 over the previous year. A complete breakdown by schools and courses is available in Vocational Research Letter No. RR-1 (Series 1966-67).

STATE TECHNICAL INSTITUTES

A total of 414 students were awarded Associate Degrees in Applied Science from the four state technical institutes in 1966. Three hundred and fifty seven of these completed two-year day programs on a full-time basis, while 47 graduates completed similar programs in the evening division. This represents a total increase of 141 graduates over 1965.

Further details are available in Vocational Research Letter No. RR-2 (Series 1966-67).

Project No. 665

PROGRAM DEVELOPMENT IN VOCATIONAL EDUCATION IN HEALTH SERVICE OCCUPATIONS AT THE SECONDARY AND POST-SECONDARY LEVELS FOR CONNECTICUT

Principal Investigator:

David Pinsky, Professor of Labor Education, University of Connecticut

Project Consultant:

Dr. P. T. Masley, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

To conduct a study for Connecticut and its seventeen labor market areas to determine the type and number of trained workers needed for health service jobs by 1971 and 1976 and to determine the educational and course content requirements for these jobs.

Source of data:

Administrators in various health fields were asked to supply information concerning current employment, expansion needs, expected withdrawals, and current job vacancies as well as state their opinions as to formal education needed in each job listed.

Findings and Conclusions:

1. The study covered 49 different health occupations in which 38,867 were employed in June, 1967.

2. The occupation with the largest need by 1976 is staff nurse with an estimated demand of 18,992.

3. In the technician field the largest anticipated need for 1976 will be for 1,234 laboratory technicians.

4. The hospitals will need 31,196 new workers over the next 9 years.

5. Among hospital administrators, 5 replies specified college and 31 diploma school as the minimum required level for staff nurse.

6. English and mathematics were most frequently listed subjects for general course content.

Implementation:

Since the completion of this study a number of sub-committees have been formed to study the most appropriate ways of meeting the health occupation needs identified in the study report.

A number of new training programs have already been added for nurse's aide training on the secondary level and for post-secondary courses for licensed practical nurses and dental assistants.

Project No. 666

STUDENT ADMISSIONS REPORT - FALL 1966

Principal Investigator:

Richard C. Wilson, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

This is an annual study which is made for the purpose of compiling pertinent data regarding applicants and acceptances into the state technical colleges and the state-operated regional vocational-technical schools.

Source of data:

Applicant data supplied by fourteen vocational-technical schools and four state technical colleges.

Findings and Conclusions:

The vocational-technical schools accepted 64% (3,465) of all 5,376 applicants. Of the 1,911 students who were not accepted, 637 of these were qualified applicants who would have been accepted had room permitted.

The state technical colleges had a total of 2,405 new applicants. Of these, 63% (1,524) were accepted for enrollment. Eight hundred eighty one applicants were not accepted, 70 of whom were qualified for admission.

Complete data is available in Vocational Research Letter No. RR-4 (Series 1966-67).

Implementation:

The data gathered in this study has been used in studying the need for new facilities and for expansion of several existing programs.

Project No. 667

GRADUATE FOLLOW-UP SURVEY -- CLASS OF 1966

Principal Investigator:

Richard C. Wilson, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

To ascertain the employment status of graduates of vocational programs in Connecticut.

Source of data:

Follow-up surveys of graduates by all schools with vocational education courses.

Findings and Conclusions:

Eighty-three schools and colleges reported a total of 5,066 vocational graduates of full-time preparatory courses in 1966. These graduates represented seven program fields in vocational education in Connecticut. While most (4,139) of these students completed secondary level programs, an appreciable number (927) were graduates of post-secondary programs in community colleges, state technical institutes and vocational-technical schools.

The following is a digest of some of the more pertinent highlights of the survey:

Total Number of Graduates	5066
Number Continued Education -- Full-time School	1003
Percent Continued Full-time School	19.8
Entered Armed Services	563
Percent Entered Armed Services	11.1
Other Reason Not Available	97
Available for Employment	3403
Number Employed in Occupation Trained or Related	2786
Percent Employed in Occupation Trained or Related	81.9
Mean Hourly Wage	1.91
Employed in Occupation Not Related to Training	403
Unemployed	54
Percent Unemployed	1.06
Unaccounted for or Status Unknown	160

Implementation:

A printed booklet giving complete follow-up statistics by schools and by programs was distributed to all vocational programs throughout the state. This booklet plays an important role in evaluating the success of all vocational education courses and serves as a guide to counselors, teachers, and students in determining opportunities available to vocational graduates.

Project No. 668

SURVEY OF TRAINING NEEDS FOR AIRCRAFT AND POWERPLANT MECHANICS

Principal Investigator:

Connecticut Labor Department, Employment Security Division
Research and Information

Project Consultants:

Richard C. Wilson, Bureau of Vocational Services
Connecticut State Department of Education

Frederick S. Okula, Bureau of Vocational-Technical Schools
Connecticut State Department of Education

Purpose of Study:

The study was initiated at the request of the Division of Vocational Education to determine needs, training requirements, and curriculum implications for the training of aircraft and powerplant mechanics.

Source of data:

Questionnaires were sent to the Connecticut firms in the aviation manufacturing and maintenance industry groups.

Findings and Conclusions:

Findings from the responding firms are as follows:

1. The total number of mechanics employed by the responding firms is 130 piston and 700 jet mechanics.

2. The present overall need is 39 piston and 111 jet mechanics.

3. The greatest demand is in the aircraft manufacturing industries.

4. By June, 1969 there will be an additional need for 73 piston and 314 jet mechanics.

Other findings indicate the following:

1. By June, 1969 there will be an overall total employment of 310 piston and 370 jet mechanics.

2. The primary source of training for aircraft mechanics was vocational-technical school graduates with the secondary source being Armed Forces training.

Implementation:

Several meetings were held with aircraft industry representatives to discuss the results of this study. It was decided to investigate the possibility of offering the program in large cities. This line of thought is still being pursued.

Present plans call for an aircraft mechanics course in the vocational-technical school being planned for the Milford-Stratford area and for an aircraft technology in the new Orange-New Haven technical college.

Project No. 669

A SURVEY TO DETERMINE THE OCCUPATIONAL NEEDS FOR THE FOOD AND LODGING INDUSTRY

Principal Investigator:

Robert E. Bennett, Division of Vocational Education
Connecticut State Department of Education

Purpose of Study:

To assist Connecticut food and lodging industry in determining manpower and training needs for occupations in this industry.

Source of data:

Questionnaires mailed to food and lodging associations.

Findings and Conclusions:

Although 1,250 questionnaires were distributed, only 81 were returned providing a 6.4% response. However, the indications of this small sample, as well as data obtained from other surveys, indicate there is a need for the extension of training operations for those interested in working in the food and lodging industry of Connecticut.

Project No. 6610

EDUCATIONAL STATUS STUDY -- DIVISION OF VOCATIONAL EDUCATION

Principal Investigators:

Joseph M. Angelillo, Bureau of Vocational Services
Connecticut State Department of Education

Walter A. Bialobrzeski, Bureau of Vocational-Technical Schools
Connecticut State Department of Education

Errol J. Terrell, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

To determine the educational levels attained by members of the professional staff.

Source of data:

Individual questionnaires completed by professional staff members of the Division of Vocational Education including central office and the staff members of the state technical institutes and vocational-technical schools.

Findings and Conclusions:

Numbers and percentages were arrived at for all educational levels for shop, related, and general education instructors as well as for administrative and guidance personnel.

Information was made available for each of the three bureaus in the Division of Vocational Education.

Details are recorded in Vocational Research Letter No. RR-5 and RR-5 (Revised), (Series 1966-67).

Project No. 6611

SOPHOMORE IQ STUDY -- VOCATIONAL-TECHNICAL SCHOOLS

Principal Investigator:

Guidance Coordinators Research Committee
Connecticut Vocational-Technical Schools

Principal Consultant:

Richard C. Wilson, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

This study is conducted every three years to determine the general intellectual capacities of vocational-technical students.

Source of data:

Henmon-Nelson Form A, 1960 Impression administered to sophomores in fourteen regional vocational-technical schools.

Findings and Conclusions:

A total of 1,775 sophomores in the fourteen regional vocational-technical schools were tested during the period October 1 - 14, 1966.

The mean IQ for the entire group was 99.52 and the median was 99.56.

Project No. 6612

THE UNIVERSITY AND VOCATIONAL-TECHNICAL EDUCATION

Principal Investigator:

W. Howard Martin, Professor of Education, University of Connecticut

Project Consultant:

Walter Bialobrzeski, Bureau of Vocational-Technical Schools
Connecticut State Department of Education

Purpose of Study:

To determine the needs of vocational and technical education in Connecticut and to determine the most effective means of meeting these needs through cooperation among the institutions and agencies involved.

Source of data:

In-depth study of vocational and technical teacher education needs conducted through the combined efforts of the University of Connecticut, Central Connecticut State College, and the Connecticut State Department of Education.

Findings and Conclusions:

The study is still in progress. Findings to date indicate that there is an immediate need for expansion in vocational-technical teacher and leadership education. A complete report on this study will be forthcoming.

Project No. 6613

A SEARCH OF MATERIALS FOR PLANNED PROGRAMMED INSTRUCTION IN THE MACHINE TRADES FOR POSSIBLE USE IN CONNECTICUT VOCATIONAL-TECHNICAL SCHOOLS

Principal Investigator:

Clarence R. Calder, Assistant Professor, School of Education
University of Connecticut

Project Consultant:

Dr. P. T. Masley, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

To ascertain to what degree educational media was being used in vocational-technical education.

Source of data:

Includes a review of related literature, a survey of state programs, visitations to a limited number of unusual programs, and examination of vocational-technical education media.

Findings and Conclusions:

1. Programmed instruction when used by industry and/or the military is at least as effective as other instructional methods.

2. Programmed instruction when used by the military or industry cuts training time 20 to 30 percent.

3. Individuals from all ages and abilities can learn effectively from properly prepared programmed materials.

4. A limited amount of programmed materials is available for vocational-technical education.

5. There is no known Connecticut vocational school that has a programmed learning center in operation.

6. A limited amount of programmed instruction exists in the teaching of manipulative skills in a particular shop area.

Implementation:

As a result of this study a committee was formed to discuss the benefits of programmed instruction. The curriculum, equipment lists, and overall program costs are presently being developed so that this program can be considered for inclusion in the vocational-technical schools.

Project No. 6614

SURVEY OF TRAINING NEEDS FOR DIESEL ENGINE MAINTENANCE AND REPAIRMEN

Principal Investigator:

Connecticut Labor Department, Employment Security Division Research and Information

Project Consultants:

Richard C. Wilson, Bureau of Vocational Services
Connecticut State Department of Education

Frederick S. Okula, Bureau of Vocational-Technical Schools
Connecticut State Department of Education

Purpose of Study:

The survey was conducted at the request of the Division of Vocational Education to determine manpower needs and training requirements for diesel engine maintenance and repairmen in Connecticut.

Source of data:

Questionnaires were sent to a selected sample of 245 Connecticut firms. One hundred and sixty-six firms responded.

Findings and Conclusions:

The total sample included 245 firms. The firms were selected from industries where the use of diesel-engines would be reasonably widespread; heavy construction, freight transportation, buslines, wholesale and retail diesel-engine equipment, dealers, manufacturers and firms engaged specifically in diesel-engine servicing and repair.

The number of firms responding to the survey totaled 166 or 67.7%. These firms had a combined payroll of more than 30,000 workers and employed 515 diesel-engine repairmen, with a current need for 63 additional workers. The greatest demand was indicated in the heavy construction and diesel-engine equipment dealer industry groups. Projections of future employment to March 1969 totaled 642, indicating a net additional need for 127 repairmen. Expansion of this data estimates current employment of diesel repairmen to over 975 with a present-day need of 120 additional workers. Assuming that present economic trends continue, more than 250 diesel-engine maintenance and repairmen will be needed by March 1969 bringing the statewide total over 1,225.

Implementation:

The findings of this study have brought about the development of curriculum, program costs, and equipment lists. Upon completion it is hoped that a committee will be established for review purposes and that recommendations can be offered for program implementation.

Project No. 6615

SURVEY OF TRAINING NEEDS FOR SMALL GASOLINE ENGINE REPAIRMEN

Principal Investigator:

Connecticut Labor Department, Employment Security Division Research and Information

Project Consultants:

Richard C. Wilson, Bureau of Vocational Services
Connecticut State Department of Education

Robert E. Bennett, Division of Vocational Education
Connecticut State Department of Education

Purpose of Study:

This study was conducted at the request of the Division of Vocational Education in order to determine the present employment, present demands, future needs, and training requirements for small (under 25 horsepower) gasoline engine repairmen in firms selling, repairing or utilizing this equipment.

Source of data:

Questionnaires were sent to 275 selected Connecticut firms. Responses were received from 181 or 65.8% of those surveyed.

Findings and Conclusions:

Analysis of the survey data showed that current statewide employment totalled 499 small gasoline engine repairmen with an immediate need for 367 more. By April 1969, employment of these repairmen should exceed 1000, showing a net gain of more than 500.

Further information was gathered concerning types of firms, area needs, training sources, and training requirements.

Implementation:

A number of instructional units in small engine repair have been added to existing curricula in vocational agriculture and industrial programs in Connecticut public schools.

Project No. 6616

THE ESTABLISHMENT OF THE RESEARCH COORDINATING UNIT IN THE CONNECTICUT STATE DEPARTMENT OF EDUCATION

Project Consultant:

Dr. P. T. Masley, Bureau of Vocational Services
Connecticut State Department of Education

Purpose of Study:

To determine to what extent the Research Coordinating Unit had achieved its original objectives and what effect it has had in conducting and stimulating vital research in vocational education.

Source of data:

Assessment of the activities and impact of the Research Coordinating Unit in the Division of Vocational Education from June 1965 through November 1966.

Findings and Conclusions:

1. The number of research activities and the value of these studies conducted by the Division of Vocational Education justified the expansion of the present research staff.

2. Sufficient evidence indicates that there is a willingness of many agencies to cooperate with the Research Coordinating Unit in conducting vocational research.

3. The large amount of research materials and studies indicates the necessity of collection and distribution.

4. The incorporation of data processing techniques in the Division of Vocational Education has been initiated.

5. Emergence of occupational trends and new occupations justify the need for research studies.

6. The attendance at conventions, seminars, and conferences has enabled research staff members to keep abreast of vocational research developments.

7. There are advantages to include the state advisory committees as an additional resource to determine research priorities.

OTHER VOCATIONAL RESEARCH

OCCUPATIONAL EDUCATION IN THE SHORELINE AREA

Principal Investigator:

John J. Karnes, Jr., Professor, School of Education
University of Connecticut

Purpose of Study:

To determine whether an occupational training center is needed in the Shoreline area including the Connecticut towns of Clinton, Guilford, Madison, Old Saybrook, and Westbrook.

Source of data:

Questionnaires were received from high school pupils and teachers and business and industrial concerns.

Findings and Conclusions:

It is understood that the occupational training center is to be established in Clinton. As a result, many of the recommendations are directed toward the establishment of the center and others are concerned in the other types of vocational education programs.

Recommendations directed toward the establishment of the center are as follows:

1. That an occupational training center be established to provide vocational education opportunities to 11th and 12th grade pupils.

2. That the occupational training center provide instructional laboratories in at least the mechanics, drafting, electricity - electronics, woodwork, metalwork and textile areas.

3. That a coordinator of vocational education serve as director of the occupational training center.

4. That a counselor, or a part-time social worker, and a part-time psychological examiner be available to the occupational training center.

5. That an advisory committee be established to give general counsel to the occupational training center.

6. That teacher-consultants contribute to the instructional program.